

CLAIMS:

1. A pump system (10) for a personal care appliance, comprising:
 - a fluid cartridge member (12) made of flexible material, the fluid cartridge member having a fluid-filled portion (14) and an exit opening (17) for the fluid in the cartridge, for delivery to a line which connects to a workpiece portion of the appliance;
 - a base member (24) having a cutout portion (26) into which the fluid-filled portion of the cartridge member can nest; and
 - a pressing member (32), at least a nesting portion (36) of which has a configuration which substantially matches the cross-section of the cutout portion of the base member, such that, over at least a substantial portion of the length of the cutout portion, the fluid-filled portion and the pressing member substantially nest with the cutout portion, so that as the pressing member is moved in operation forwardly over the cartridge, fluid is moved from the fluid-filled portion through the exit opening, with the flexible cartridge being flattened during such action substantially without creasing of the cartridge.
2. A system of claim 1, wherein the pressing member is moved by user action.
3. A system of claim 1, wherein the pressing member includes two mounting elements (42, 44) which extend outwardly from opposing ends of the nesting portion.
4. A system of claim 3, wherein the nesting portion is configured to nest with the cutout portion around its entire circumference, permitting the nesting portion to roll along the fluid-filled portion of the cartridge, pressing fluid out therefrom through the exit opening.
5. A system of claim 1, wherein the fluid cartridge includes a reservoir portion (20) from which fluid moves to replenish fluid in the fluid-filled portion after a dispensing action.
6. A system of claim 5, wherein the fluid-filled portion comprises a material which inflates after being compressed by the pressing member, such that fluid from the reservoir moves into the empty part of the fluid-filled portion by vacuum action.
7. A system of claim 5, including means (50) for pressurizing the reservoir so that fluid is moved into the emptied part of the fluid-filled portion behind the pressing member as the pressing member moves along its path.

8. A system of claim 1, wherein a beginning part of the cutout portion is narrower than the length of the nesting portion of the pressing means but tapers outwardly to a point where the nesting portion fully nests within the cutout portion.

9. A system of claim 1, wherein an end part (64) of the cutout portion tapers inwardly such that as the pressing member moves along its path, it is lifted upwardly from the base member and out of nesting contact with the cutout portion.

10. A system of claim 9, including a support arm member (70) which is arranged and operative to support the pressing member for a return of the pressing member to a start point of its pressing action.

11. A system of claim 10, wherein return of the pressing member is by spring action.

12. A power toothbrush, comprising:

a handle portion (2) having a driving system and a power supply for the driver assembly;

a driven member assembly having an arm on which a brushhead (25) is mounted and a structural element for connecting the driven assembly to the handle element;

a pump system (10) for dispensing fluid to the brushhead (25), the pump assembly including a fluid cartridge member (12) made of flexible material, the fluid cartridge member having a fluid-filled portion (14) and an exit opening (17) for the fluid in the cartridge, for delivery to a line (32) which connects the pump to the brushhead;

a base member (24) having a cutout portion (26) into which the fluid-filled portion of the cartridge member can nest; and

a pressing member (32), at least a nesting portion of which has a configuration which substantially matches the cross-section of the cutout portion of the base member, such that, over at least a substantial portion of the length of the cutout portion, the fluid-filled portion and the pressing member substantially nest with the cutout portion, so that as the pressing member is moved in operation over the cartridge, fluid is moved from the fluid-filled portion through the exit opening into the connecting line, with the flexible cartridge being flattened during such action substantially without creasing thereof.

13. A system of claim 12, wherein the pressing member includes two mounting elements (42, 44) which extend outwardly from opposing ends of the nesting portion.

14. A system of claim 12, wherein the nesting portion is configured to nest with the cutout portion around its entire circumference, permitting the nesting portion to roll along the fluid-filled portion of the cartridge, pressing fluid out therefrom through the exit opening.

15. A system of claim 12, including means (50) for pressurizing the reservoir so that fluid is moved into the emptied part of the fluid-filled portion behind the pressing member as the pressing member moves along its path.